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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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JIM WILLIAMS, CFO
INTEGRATED TELECOM EXPRESS, INC.
400 RACE STREET
SAN JOSE, CA 95126

EXAMINER

FAN, CHIEH M

ART UNIT

PAPER NUMBER

2634

6

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/054,410

Applicant(s)

LIU ET AL.

Examiner

Chieh M Fan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16,32-36 and 61-120 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16,32-36 and 61-120 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In particular, the abstract of the instant application contains the word "disclosed", which should be changed.

Claim Objections

2. Claims 32-36 are objected to because of the following informalities:
 - a. "an analog codec" in lines 8 and 10 of claim 32 should be changed to "the analog codec"; and
 - b. "an ATM interface" in lines 8 and 10 should be "the ATM interface".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 87, 88 and 106-120 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 87 and 88, the specification of the instant application teaches that the digital controller is placed on the motherboard and the analog codec is placed on a card that is physically separated from the motherboard. Such arrangement would keep the analog codec free from the electronic noise from the electronic components on the motherboard (also see the preamble of claim 83, on which claims 87 and 88 depend). The specification never teaches that the whole system may be incorporated in a chipset or a motherboard. The claimed limitations in claims 87 and 88 clearly contradict with the preamble of claim 83.

Regarding claims 106-112, as described above, the specification of the instant application teaches that the digital controller is placed on the motherboard and the analog codec is placed on a card that is physically separated from the motherboard. Therefore, the specification never teaches a method of communicating data between a

first integrated circuit located on a computer motherboard and a second integrated circuit located on the computer motherboard as recited in the preamble of the independent claim 106. The specification also never teaches the steps (c) and (d) recited in claim 106.

Regarding claims 113-120, as described above, the specification of the instant application teaches that the digital controller is placed on the motherboard and the analog codec is placed on a card that is physically separated from the motherboard. Therefore, the specification never teaches a method of communicating data between a first integrated circuit located on a computer motherboard and a second integrated circuit located on the computer motherboard as recited in the preamble of the independent claim 113.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 32-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 36 recites the limitation "said cit clock signal" in line 13. There is insufficient antecedent basis for this limitation in the claim.

7. Claims 83-91 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such

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omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationships of the digital controller, the analog section, the plurality of receive signal lines, the plurality of transmit lines and the bit clock signal line.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,345,072 in view of Grube et al. (U.S. Patent No. 5,606,577).

The difference between claims 1-16 of the instant application and the claims 1-16 of U.S. Patent No. 6,345,072 lies in (a) claim 1 of the instant application does not claim the step of providing a word clock signal, i.e., the claim is broadened by not claiming a

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word clock signal; and (b) the bit clock is variable to accommodate a plurality of xDSL transmission protocols. With respect to item (a), the broader application claims would have been obvious in view of the narrower issued claims (see *In re Emert*, 124 F.3d 1458, 44 USPQ2d 1149). With respect to item (b), Grube et al. teaches that the clock rate of an xDSL data system is variable based on the data rate (see col. 41, lines 6-10). It is well known that an xDSL system such as an ADSL system may transmit data at different rates. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a variable bit clock signal so as to transmit the data at different rates.

10. Claims 32-36 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 32-36 of U.S. Patent No. 6,345,072 in view of Grube et al. (U.S. Patent No. 5,606,577).

The difference between claims 32-36 of the instant application and the claims 32-36 of U.S. Patent No. 6,345,072 lies in (a) claim 32 of the instant application does not claim an xDSL modem, i.e., the claim is broadened by not claiming an xDSL modem; and (b) the bit clock is variable to accommodate a plurality of xDSL transmission protocols. With respect to item (a), the broader application claims would have been obvious in view of the narrower issued claims (see *In re Emert*, 124 F.3d 1458, 44 USPQ2d 1149). With respect to item (b), Grube et al. teaches that the clock rate of an xDSL data system is variable based on the data rate (see col. 41, lines 6-10). It is well known that an xDSL system such as an ADSL system may transmit data at different

rates. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a variable bit clock signal so as to transmit the data at different rates.

11. Claims 61-66 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 32-36 of U.S. Patent No. 6,345,072 in view of Grube et al. (U.S. Patent No. 5,606,577).

The difference between claims 61-66 of the instant application and the claims 61-66 of U.S. Patent No. 6,345,072 lies in (a) claim 61 of the instant application does not claim an embedded control channel data in said xDSL compatible link, i.e., the claim is broadened by not claiming an embedded control channel data; and (b) the bit clock is variable to accommodate a plurality of xDSL transmission protocols. With respect to item (a), the broader application claims would have been obvious in view of the narrower issued claims (see *In re Emert*, 124 F.3d 1458, 44 USPQ2d 1149). With respect to item (b), Grube et al. teaches that the clock rate of an xDSL data system is variable based on the data rate (see col. 41, lines 6-10). It is well known that an xDSL system such as an ADSL system may transmit data at different rates. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a variable bit clock signal so as to transmit the data at different rates.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1, 3-12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bingham et al. (U.S. Patent No. 5,680,394) in view of Grube et al. (U.S. Patent No. 5,606,577).

Regarding to claims 1, 5, 7, 8, 9, 10, 16, Bingham et al. disclose a method for the transmission of xDSL data (see col. 1, line 6-col. 2, line 26) between a central unit and a plurality of remote units (see Fig. 1b). The central unit includes a master oscillator (master clock) that feeds a sample clock and a symbol clock (see col. 7, lines 25-47, Fig. 6, also see claim 23). Each remote unit may be grant access in successive time period; that is known as Time Division Multiple Access (TDMA) (see col. 8, lines 8-10). Furthermore, a plurality of transmitting line and receiving lines are provided for communication (see 206a-206e in Fig. 1b). Bingham et al. further teach that the information for the media access control may be included as the overhead in the downstream signal (col. 8, lines 18-23). The difference between Bingham et al. and the instant invention lies in that (a) Bingham et al. teach the communication link between a central unit and a plurality of remote units, but do not teach the communication link

between a digital controller and a plurality of analog codecs, and (b) the bit clock is variable to accommodate a plurality of xDSL transmission protocols.

With respect to item (a), the digital controller and the analog codecs do not perform any other function besides transmitting/receiving xDSL data. The digital controller and analog codecs are broadly interpreted as the transmitting end and receiving ends in a communication link. Based on this reason, it would have been obvious for a person of ordinary skill in the art at the time the invention was made to substitute the central unit and remote units with the digital controller and analog codecs in the communication system of Bingham et al.

With respect to item (b), Grube et al. teaches that the clock rate of an xDSL data system is variable based on the data rate (see col. 41, lines 6-10). It is well known that an xDSL system such as an ADSL system may transmit data at different rates. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a variable bit clock signal so as to transmit the data at different rates.

Regarding claim 3, the number of transmit signal lines and the receive signal lines depends the amount of data to be transmitted/received. Therefore, the number of transmit signal lines and the receive signal lines is merely is design choice, dictated by the system requirement and the user's need. Specifying the number of transmit signal lines and the receive signal lines would not provide any inventive steps.

Regarding claims 4, 6, 11 and 12, as described in the rationale applied to reject claim 1, Bingham et al. teaches a word clock signal and sending control signal. Also

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note that the number of bit clock cycles in a word clock is a matter of design option, which is dependent on the number of bits in a data word or frame.

14. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bingham et al. (U.S. Patent No. 5,680,394) in view of Grube et al. (U.S. Patent No. 5,606,577) as applied to claim 1 above, and further in view of Suzuki (U.S. Patent No. 6,529,479).

Regarding claims 13-15, Bingham et al. in view of Grube et al. teaches the claimed invention, see the rationale applied to claim 1 above, but fails to teach an ATM interface.

Suzuki teaches an ATM interface between an xDSL modem and an ATM network (see cols. 1-4, especially col. 2, lines 37-49). The ATM service may be thereby implemented in a global scale. That is, the ATM networks may be connected through the high-speed xDSL line (i.e., the existing copper wire). It is desirable to construct a global network such that the data may be communicated globally. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Suzuki into the system of Bingham et al. in view of Grube et al. such that the transmit signal lines and the receive signal lines may support an ATM interface.

15. Claims 32, 33, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bingham et al. (U.S. Patent No. 5,680,394) in view of Suzuki (U.S. Patent No. 6,529,479) and Grube et al. (U.S. Patent No. 5,606,577).

Regarding to claims 32, 35 and 36, Bingham et al. disclose a method for the transmission of xDSL data (see col. 1, line 6-col. 2, line 26) between a central unit and a plurality of remote units (see Fig. 1b). The central unit includes a master oscillator (master clock) that feeds a sample clock and a symbol clock (see col. 7, lines 25-47, Fig. 6, also see claim 23). Each remote unit may be grant access in successive time period; that is known as Time Division Multiple Access (TDMA) (see col. 8, lines 8-10). Furthermore, a plurality of transmitting line and receiving lines are provided for communication (see 206a-206e in Fig. 1b). Bingham et al. further teach that the information for the media access control may be included as the overhead in the downstream signal (col. 8, lines 18-23). The difference between Bingham et al. and the instant invention lies in that (a) an ATM interface and (b) the bit clock is variable to accommodate a plurality of xDSL transmission protocols.

With respect to item (a), Suzuki teaches an ATM interface between an xDSL modem and an ATM network (see cols. 1-4, especially col. 2, lines 37-49). The ATM service may be thereby implemented in a global scale. That is, the ATM networks may be connected through the high-speed xDSL line (i.e., the existing copper wire). It is desirable to construct a global network such that the data may be communicated globally. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Suzuki into the system of

Bingham et al. in view of Grube et al. such that the transmit signal lines and the receive signal lines may support an ATM interface.

With respect to item (b), Grube et al. teaches that the clock rate of an xDSL data system is variable based on the data rate (see col. 41, lines 6-10). It is well known that an xDSL system such as an ADSL system may transmit data at different rates. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a variable bit clock signal so as to transmit the data at different rates.

Regarding claim 33, Utopia I and II interfaces are well known ATM interface standards (official notice is taken). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Utopia I or II interface as the ATM interface so as to conform with the standards.

16. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bingham et al. (U.S. Patent No. 5,680,394) in view of Suzuki (U.S. Patent No. 6,529,479) and Grube et al. (U.S. Patent No. 5,606,577) as applied to claim 32 above, and further in view of the admitted prior art.

Bingham et al. in view of Suzuki and Grube et al. teaches the claimed invention, see the rationale applied to claim 32 above, but fails to teach the digital controller is placed on a computer motherboard and the analog codec is placed at a position free from the electronic noise from the electronic components on the motherboard.

The admitted prior art described in the background section and in Fig. 1 teaches separating the analog and digital portions of a high-speed modem. The digital controller is placed on the motherboard and the analog codec is placed on a card that is physically separated from the motherboard. Such arrangement would keep the analog codec free from the electronic noise from the electronic components on the motherboard. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place the digital controller on the motherboard and place the analog codec on a card that is physically separated from the motherboard, so as to keep the analog codec free from the electronic noise from the electronic components on the motherboard.

17. Claims 67-69, 71-78, 80, 82-85, 92-98 and 99-105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bingham et al. (U.S. Patent No. 5,680,394) in view of Grube et al. (U.S. Patent No. 5,606,577).

Regarding to claims 67, 71-75, 83, 92, 93, 99 and 100, Bingham et al. disclose a method for the transmission of xDSL data (see col. 1, line 6-col. 2, line 26) between a central unit and a plurality of remote units (see Fig. 1b). The central unit includes a master oscillator (master clock) that feeds a sample clock and a symbol clock (see col. 7, lines 25-47, Fig. 6, also see claim 23). Each remote unit may be grant access in successive time period; that is known as Time Division Multiple Access (TDMA) (see col. 8, lines 8-10). Furthermore, a plurality of transmitting line and receiving lines are provided for communication (see 206a-206e in Fig. 1b). Bingham et al. further teach

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that the information for the media access control may be included as the overhead in the downstream signal (col. 8, lines 18-23). The difference between Bingham et al. and the instant invention lies in that (a) Bingham et al. teach the communication link between a central unit and a plurality of remote units, but do not teach the communication link between a digital controller and a plurality of analog codecs, and (b) the bit clock is variable to accommodate a plurality of xDSL transmission protocols.

With respect to item (a), the digital controller and the analog codecs do not perform any other function besides transmitting/receiving xDSL data. The digital controller and analog codecs are broadly interpreted as the transmitting end and receiving ends in a communication link. Based on this reason, it would have been obvious for a person of ordinary skill in the art at the time the invention was made to substitute the central unit and remote units with the digital controller and analog codecs in the communication system of Bingham et al.

With respect to item (b), Grube et al. teaches that the clock rate of an xDSL data system is variable based on the data rate (see col. 41, lines 6-10). It is well known that an xDSL system such as an ADSL system may transmit data at different rates. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a variable bit clock signal so as to transmit the data at different rates. Note that since that data are transmitted at different rates, it is inherent that there must be some kind of data rate selecting step.

Regarding claim 68, Bingham et al. also teaches a master clock (see the oscillator in Fig. 6).

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Regarding claim 69, the use of a programmed and stored control value is well known in the art (official notice). A control value is programmable so as to provide flexibility to meet the system requirement and the user's need. A control value is stored such that it may be retrieved any time it is needed without being regenerated.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to program and store the value as claimed for the advantage described above.

Regarding claim 76, Grube et al. teaches the ADSL system (col. 41, line 7).

Regarding claims 77, 78, 98 and 105, the claimed A/D converter and a FFT circuit are inherently required in an xDSL system.

Regarding claims 80 and 85, the integration of a controller into a North Bridge chipset or a South Bridge chipset is well known in the art (official notice). The purpose of integration is to save cost and reduce circuitry size. It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate the digital controller as claimed so as to save cost and reduce size.

Regarding claims 82 and 84, Bingham et al. teaches that the data rate should be at least 51.92 Mbit/s (col. 1, line 67).

Regarding claims 89-91, the interfaces for transferring data over a USB bus, an AC-97 bus or a PCI bus are common in a PC.

Regarding claims 94-97 and 101-103, the recited limitations are fundamental properties of an xDSL system.

18. Claims 70, 81 and 86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bingham et al. (U.S. Patent No. 5,680,394) in view of Grube et al. (U.S. Patent No. 5,606,577) as applied to claim 67 above, and further in view of the admitted prior art.

Bingham et al. in view of Grube et al. teaches the claimed invention, see the rationale applied to claim 67 above, but fails to teach the digital controller is placed on a computer motherboard and the analog codec is placed at a position free from the electronic noise from the electronic components on the motherboard.

The admitted prior art described in the background section and in Fig. 1 teaches separating the analog and digital portions of a high-speed modem. The digital controller is placed on the motherboard and the analog codec is placed on a card that is physically separated from the motherboard. Such arrangement would keep the analog codec free from the electronic noise from the electronic components on the motherboard. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place the digital controller on the motherboard and place the analog codec on a card that is physically separated from the motherboard, so as to keep the analog codec free from the electronic noise from the electronic components on the motherboard.

19. Claim 79 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bingham et al. (U.S. Patent No. 5,680,394) in view of Grube et al. (U.S. Patent No. 5,606,577) as applied to claim 67 above, and further in view of Suzuki (U.S. Patent No. 6,529,479).

Bingham et al. teaches the claimed invention, see the rationale applied to claim 83 above, but fails to teach that the xDSL transmit data includes ATM cells.

Suzuki teaches xDSL transmit data includes ATM cells (see cols. 1-3, especially col. 2, lines 37-49) such that ATM service may implemented in a global scale. That is, the ATM networks may be connected through the high-speed xDSL line (i.e., the existing copper wire). It is desirable to construct a global network such that the data may be communicated globally. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include ATM cells in the xDSL data so as to implement the ATM service in a global scale.

Conclusion


20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Arnon (US Patent 5,408,260) discloses an ADSL system for communicating bi-directional data and control signals. Tran et al. (US Patent 5,931,929) teach an integrated modem on a motherboard. Roy (US Patent 6,049,531) discloses an intelligent ATM ADSL modem.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chieh M Fan whose telephone number is (703) 305-0198. The examiner can normally be reached on Monday-Friday 8:00AM-5:30PM, Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (703) 305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.


Chieh M Fan
Examiner
Art Unit 2634

cmf
March 22, 2003